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| 10/542,636 | 07/19/2005 | Gerald Chambon | Q89149 | 6921 |
| 23373 7590 03/06/2007 SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037 | | | EXAMINER NGUYEN, HOAI AN D | |
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| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
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Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/542,636

Applicant(s)

CHAMBON ET AL.

Examiner

Hoai-An D. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7/19/05 (preliminary amendment).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-27 and 29-32 is/are rejected.
- 7) ☒ Claim(s) 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 07/19/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

1. Receipt is acknowledged of the Preliminary Amendment filed on July 19, 2005. Claims 21-40 are pending in the application.

Claim Objections

2. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 21-40 have been renumbered 13-32, respectively.

3. Claims 13-18, 22 and 23 are objected to because of the following informalities:

With regard to claim 13, the first appearance of "having a" on line 5 should be deleted.

With regard to claim 14, -- reference -- should be inserted before "electrodes" on line 4.

With regard to claim 15, -- reference -- should be inserted before "oil" on lines 3 and 4, respectively.

With regard to claims 13-18, it appears that "fluid" and "oil" are equally exchangeable as recited in these claims, for example, "said fluid" on line 3 and "said oil" on line 7 of claim 13. However, "fluid" and "oil" do not have equally patentable weights. Therefore, misusing of "fluid" and "oil" causes a number of minor informalities and/or confusion in the claims due to a lack of antecedent basis. Either "fluid" or "oil" should be used. A thorough check and

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correction through out claims 13-18 is needed. For examining purposes, "fluid" has been used in the places of the appearance of "oil".

With regard to claim 22, -- . -- should be inserted after "electrodes" on line 3.

With regard to claim 23, the first appearance of "having a" on line 5 should be deleted.

Appropriate correction is required.

Claim Rejections - 35 USC § 101 and 35 USC § 112

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 13-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claims 13-22 provide for the use of a device for measuring the quality and/or degradation of a fluid, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 13-22 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a

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process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 13, 19-23 and 29-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Klun et al. (US 6,469,521 B1).

For examining purposes, claims 13-22 are treated as apparatus claims.

Klun et al. teaches a method for measuring the state of oils or fats comprising:

With regard to claim 13, a device (FIGS. 1a and 1b, measuring device 1) for measuring the quality and/or degradation of a fluid, for measuring the quality and/or the degradation of a food oil (for measuring the state of a material to be measured, especially for measuring oils and fats) (Column 5, lines 44-47), said device including a sensor (FIG. 1a, sensor 5) to be immersed in said fluid to be measured, said sensor comprising at least one pair of electrodes (FIG. 1a, sensor 5 designed as a capacitive sensor comprising two essentially identical electrodes) spaced apart from each other and extending in substantially the same plane, each electrode of each pair of electrodes further having the shape of a comb having a plurality of substantially parallel teeth, the teeth of one of the electrodes being interdigitated with the teeth of the other electrode (FIG. 1a,

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sensor 5), the electrodes and said oil forming a measuring capacitive element (FIG. 1a, sensor 5 in direct contact with the hot fat) whose capacitance varies as a function of the dielectric constant of the oil, said sensor being capable of providing an electrical output signal representative of said dielectric constant (Abstract), and processing means (FIG. 1a, microcontroller located in measuring device 1) receiving said output signal and capable of determining the degree of quality and/or degradation of said oil on the basis of said output signal, wherein both sides of the electrodes are immersed in the fluid, on either side of said plane such that said oil can flow passing through said plane (From column 5, line 44 to column 6, line 61).

With regard to claim 23, a cooking apparatus including a vat (container) for containing a cooking fluid and heating means (inherent features as disclosed in column 2, lines 40-64 and column 7, lines 25-30), wherein it further includes a device (FIGS. 1a and 1b, measuring device 1) for measuring the quality and/or degradation of said cooking fluid (for measuring the state of a material to be measured, especially for measuring oils and fats) (Column 5, lines 44-47), said measuring device including a sensor (FIG. 1a, sensor 5) having at least one pair of electrodes (FIG. 1a, sensor 5 designed as a capacitive sensor comprising two essentially identical electrodes) spaced apart from each other and extending in substantially the same plane, each electrode of each pair of electrodes further having the shape of a comb having a having a plurality of substantially parallel teeth, the teeth of one of the electrodes being interdigitated with the teeth of the other electrode (FIG. 1a, sensor 5), the electrodes and said cooking fluid forming a measuring capacitive element (FIG. 1a, sensor 5 in direct contact with the hot fat) whose capacitance varies as a function of the dielectric constant of the fluid, said sensor being capable of providing an electrical output signal representative of said dielectric constant (Abstract), and

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processing means (FIG. 1a, microcontroller located in measuring device 1) receiving said output signal and capable of determining the degree of quality and/or degradation of said cooking fluid on the basis of said output signal, the measuring capacitive element being arranged in said vat such that both sides of its electrodes are immersed in the cooking fluid on either side of said plane of the electrodes so that said cooking fluid can flow passing through said plane (From column 5, line 44 to column 6, line 61).

With regard to claims 19 and 29, the electrodes are respectively formed by flat plates (FIG. 1a, electrodes inside sensor 5).

With regard to claims 20 and 30, the capacitive elements are surrounded by a metal frame (FIG. 1a, measuring head 12) forming a screen against electromagnetic interference.

With regard to claims 21 and 31, the electrodes (FIG. 1a, electrodes inside sensor 5) of the capacitive elements are made from a food grade steel (fine gold) (Column 6, lines 28-31).

With regard to claims 22 and 32, the electrodes (FIG. 1a, electrodes inside sensor 5) of the capacitive elements are carried by an electrically insulating support structure (FIG. 1a, ceramic plate 4) having an aperture opposite a measuring region of said electrodes (Column 6, lines 28-31).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 14-17 and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klun et al. in view of Meitzler et al. (US 4,733,556 A).

Klun et al. teaches all that is claimed as discussed in the above rejection of claims 13, 19-23 and 29-32 including a measuring capacitive element (FIG. 1a, sensor 5 in direct contact with the hot fat), but it does not specifically teach the following:

- A reference capacitive element (which is similar in type to that used as the measuring capacitive element).

Meitzler et al. teaches method and apparatus for sensing the condition of lubricating oil in an internal combustion engine comprising:

With regard to claims 14 and 24, a sampling capacitor C_S (FIG. 1) and a reference capacitor C_R (FIG. 1). The sampling capacitor C_S is located within the flow path of the lubricating oil being monitored, and the reference capacitor C_R is similar in value and type to that used as the sampling capacitor C_S but utilizes a dielectric medium, such as unused lubricating oil, as a reference (FIG. 1 and column 3, lines 14-51).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method and apparatus for measuring the state of oils or fats of Klun et al. to incorporate the teaching of employing a reference capacitive element taught by Meitzler et al. since Meitzler et al. teach that such an arrangement is beneficial to provide for a highly sensitive measurement of changes in the dielectric constant of the lubricating oil and an automatic provision for zero referencing the measuring circuit when new oil has been substituted for the used oil as disclosed in column 3, lines 4-13.

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With regard to claims 15 and 25, the reference capacitive element is similar in type to that used as the measuring capacitive element; therefore, the modification of the primary references as discussed above would result in the claimed feature.

With regard to claims 16 and 26, Meitzler et al. teaches that the reference fluid (FIG. 3, reference dielectric medium 40) is arranged in an enclosed space (FIG. 3, bore 32) insulated from said oil to be measured and in thermal contact with the latter, such that the reference oil has substantially the same temperature as said oil to be measured (Column 5, lines 45-61). The modification of the primary references as discussed above would result in the claimed feature.

With regard to claims 17 and 27, Meitzler et al. teaches that the enclosed space (FIG. 3, bore 32) containing the reference oil (FIG. 3, reference dielectric medium 40) is associated with a system (FIG. 3, bore 32 and sealed plug 4) for renewing said reference oil (Column 4, lines 49-58). The modification of the primary references as discussed above would result in the claimed feature.

Allowable Subject Matter

12. Claim 18 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 101 and 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

13. Claim 28 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

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- The primary reason for the indication of the allowability of claims 18 and 28 is the inclusion therein, in combination as currently claimed, of the limitation of the renewal system comprises a reference oil tank in communication with the enclosed space and wherein the system comprises flow control means so as to allow regular renewal of the reference oil contained in the enclosed space. This limitation is found in claims 18 and 28 is neither disclosed nor taught by the prior art of record, alone or in combination.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant's attention is invited to the followings whose inventions disclose similar devices.

- Dickert et al. (US 5,262,732 A) teaches an oil monitor with magnetic field.
- Pernot et al. (US 6,600,306 B1) teaches a method and device for controlling a vat containing oil or cooking fat in situ.
- Lechner et al. (US 6,888,358 B2) teaches a sensor and sigma-delta converter.
- Hayashi et al. (US 7,129,715 B2) teaches an oil deterioration sensor.

CONTACT INFORMATION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoai-An D. Nguyen whose telephone number is 571-272-2170. The examiner can normally be reached on M-F (8:00 - 5:30) First Friday Off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld can be reached on 571-272-2168. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Hoai-An D. Nguyen
Examiner

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HADN



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